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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SECURITY INFORMATION

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COUNTRY	East Germany	REPORT	
SUBJECT	Specifications of Iontophoresis Apparatus	DATE DISTR.	30 October 1953
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SECURITY INFORMATION

REPORT

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✓ COUNTRY

East
East Germany (GDR)

DATE DISTR. 10 SEPT 53

✓ SUBJECT

Specifications of Iontophoresis Apparatus

NO. OF PAGES 3

✓ PLACE
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DATE
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IONTOPHORESIS APPARATUSPower Supply

1. In conjunction with the Physikalisches Institut of Rostock University a system was developed [see Sketch 1 on Page 3] to obtain a rectified voltage, which varied continuously between 200 and 2000 volts, and had a current of up to 100 milliamperes, as required for proposed iontophoresis work in the pharmaceutical section.
2. The power supply system was constructed in this manner: A rectified tube, type RG 62, (single-wave rectifier), was provided to rectify the alternating current from the secondary of the power transformer. This tube provides a rectified voltage of 2000 volts with a load of 100 milliamperes, and is heated by a transformer through a 0.6 ampere fuse. The tube receives the voltage to be rectified from the high voltage side of a power transformer, the primary of which is connected to the power line through a line voltage regulator transformer. The rectified current, pulsing dc because of half-wave rectification, is smoothed out by filtering through capacitors (C_1 , 0.01 mf), (C_2 , 4 mf), and (C_3 , 4 mf) and the two chokes (D_1) and (D_2) [see Sketch 1, Page 3]. At the output end of the equipment a voltmeter and ammeter provide control of the output voltage and current. The incandescent bulb, (L), connected in parallel with the primary winding of the filament transformer, is grounded and should never be connected under full load.

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After the rectifier tube is allowed to heat up (about two minutes), the desired voltage may be gradually applied.

Specifications

3. A moist chamber (K) is placed on the edges of two glass vessels, (W) (20 centimeters by 30 centimeters), [see Sketch 2, Page 3]. This chamber consists of two glass plates (30 centimeters by 40 centimeters) which are held apart at a distance of 4 centimeters by a glass frame, similar to a water glass, which is cemented between them. Between the plates, a paper strip (P), impregnated with buffer is inserted in such a way that it hangs free and touches the frame only. The projecting ends of the strip are immersed in a buffer solution, which fills both vessels to the same level. This is important, because otherwise a siphoning action may easily result, and the liquid may flow from the higher level through the paper to the lower. If this happens, the iontophoretic processes are more difficult to control. The carbon electrodes (E), are also in the same solution. They are surrounded by a glass tube which terminates at the bottom in a G-2 frit. Therefore, organic products released from the carbon electrodes during electrolysis do not immediately enter the buffer solution, and can be easily removed from time to time. Gas forming in the electrode chambers can be removed through a rubber hose (G), and, in addition, the level of the liquid can be raised so that the carbon electrodes are fully immersed. In this way, current of too high density is avoided. A phosphate buffer (Sorensen pH 6) is used for the buffer solution. Paper No. 388^h from the DHZ Chemnitz Company is used at the pharmaceutical section.

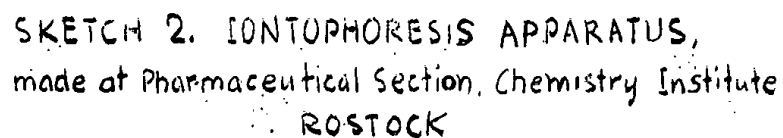
Application

4. Iontophoresis was employed to separate Falicain breakdown products

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